





protection network in which a working route and a reserved route are set by controlling designated routers which are involved in the working and reserved routes, wherein the reserved route branches from the working route at a start-point router,

5                wherein each of a plurality of designated routers forming the working route, comprises:

              a line failure detector for detecting a failure occurring in a link to a next-hop router on the working route;

              a table for storing information indicating where a  
10    packet to be protected is forwarded to; and

              a packet distribution controller for, when a packet to be protected is received in case of occurrence of the failure, forwarding the packet to be protected depending on the information stored in the table,

15               wherein the designated routers other than the start-point router forwards the packet to be protected back to the start-point router in case of occurrence of the failure, wherein the start-point router forwards the packet to be protected received back from another router to the reserved route.

20               6.        The packet transfer network according to claim 5, wherein the start-point router is an ingress router to the packet protection network.

7.        The packet transfer network according to claim 5,

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start-point router is an ingress router to the packet protection network.

10. The router according to claim 8, wherein the information of the table in each of the designated routers is  
5 downloaded from a network management server of the packet protection network depending on which one of the start-point router and a transit router the designated router is.

11. A recording medium storing a computer-readable program for instructing a computer to restore a flow of packets  
10 in a packet transfer network composed of a plurality of routers, the computer-readable program comprising the steps of:

at a network management server,

a) setting a working route and a reserved route in the packet transfer network, wherein the reserved route branches  
15 from the working route at a start-point router;

at each of routers other than the start-point router on the working route,

b) determining whether a failure occurs in a link to a next-hop router on the working route;

20 c) determining whether an incoming packet is to be protected;

d) when a packet to be protected is received in case of occurrence of the failure, sending the packet to be protected

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back to the start-point router; and

at the start-point router,

e) when receiving back the packet to be protected,  
forwarding it to the reserved route.

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